

## PCT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>JL2315(P2345)</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 00/ 00063</b>	International filing date (day/month/year) <b>12/01/2000</b>	(Earliest) Priority Date (day/month/year) <b>13/01/1999</b>
Applicant <b>THE SECRETARY OF STATE FOR DEFENCE et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :
- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  Certain claims were found unsearchable (See Box I).

3.  Unity of Invention is lacking (see Box II).

## 4. With regard to the title,

- the text is approved as submitted by the applicant.
- the text has been established by this Authority to read as follows:

## 5. With regard to the abstract,

- the text is approved as submitted by the applicant.
- the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. The figure of the drawings to be published with the abstract is Figure No.

- as suggested by the applicant.
- because the applicant failed to suggest a figure.
- because this figure better characterizes the invention.

2  
 None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 00/00063

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC 7 G01C11/00**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

**IPC 7 G01C**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>TIM BELLERBY ET AL: "RETRIEVAL OF LAND AND SEA BRIGHTNESS TEMPERATURES FROM MIXED COASTAL PIXELS IN PASSIVE MICROWAVE DATA" IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING, vol. 36, no. 6, November 1998 (1998-11), pages 1844-1851, XP002136739 USA the whole document</p> <p>-----</p>	1, 16, 17, 22, 25-27, 31

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

### ° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

2 May 2000

Date of mailing of the international search report

17/05/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
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Fax: (+31-70) 340-3016

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Hunt, J



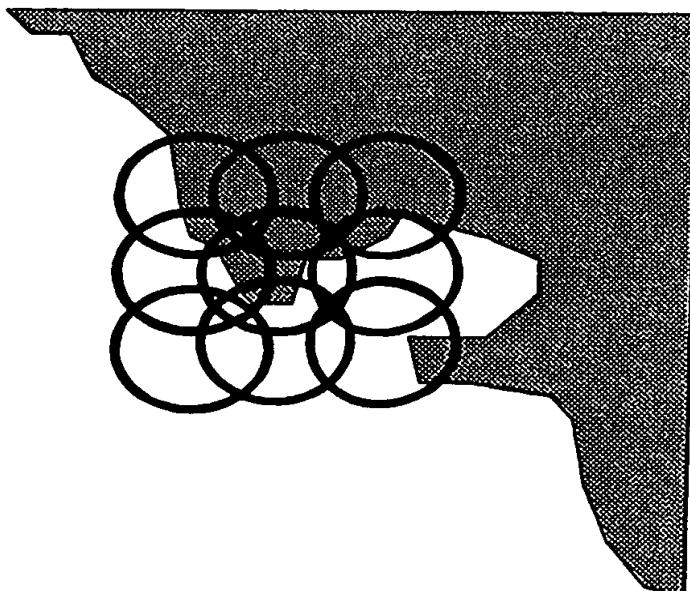
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> :  G01C 11/00		A1	(11) International Publication Number: <b>WO 00/42385</b>
			(43) International Publication Date: 20 July 2000 (20.07.00)
(21) International Application Number: PCT/GB00/00063 (22) International Filing Date: 12 January 2000 (12.01.00)		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(30) Priority Data: 9900642.1 13 January 1999 (13.01.99) GB		Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(71) Applicant ( <i>for all designated States except US</i> ): THE SECRETARY OF STATE FOR DEFENCE [GB/GB]; Defence Evaluation and Research Agency, Farnborough, Hampshire GU14 0LX (GB).			
(72) Inventors; and (75) Inventors/Applicants ( <i>for US only</i> ): BARRETT, Eric, Charles [GB/GB]; 44 Hilldale Road, Backwell, North Somerset BS48 3JZ (GB). BEAUMONT, Michael, John [GB/GB]; Flat 39/10 Nugent Hill, Cotham, Bristol BS6 5TD (GB).			
(74) Agent: BARKER BRETELL; 138 Hagley Road, Edgbaston, Birmingham B16 9PW (GB).			

(54) Title: IMPROVED METHOD OF PROCESSING DATA AND DATA PROCESSING APPARATUS

## (57) Abstract

A method of extracting information from remotely sensed data is disclosed comprising the steps of acquiring a plurality of data samples from at least one sensor, each data sample corresponding to a respective footprint. The one or more sensors are adapted to sense a parameter of a surface and have a known gain function. The data samples are processed to produce a respective footprint corresponding to the area of the surface contributing to each data sample, and a set of n bounded areas are selected for the surface being sensed and allocating a variable to the area defined by each boundary. Next, a weighting  $\alpha$  is defined for each data sample dependent upon the sensor gain function and the location of the footprint for the respective data sample relative to the bounded areas of the surface, and a set of at least n equations are constructed from said weighted data samples. Finally, these equations can be solved to determine the values for the variables allocated to respective bounded areas.



Example of the nine footprints used by the retrieval technique

***FOR THE PURPOSES OF INFORMATION ONLY***

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

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CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

## INTERNATIONAL SEARCH REPORT

Internat'l Application No  
PCT/GB 00/00063

A. CLASSIFICATION OF SUBJECT MATTER  
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Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G01C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Further documents are listed in the continuation of box C.

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- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

2 May 2000

Date of mailing of the international search report

17/05/2000

Name and mailing address of the ISA

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Authorized officer

Hunt, J

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

16

REC'D 26 APR 2001	(PCT)
WFO	PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference  JL2315(P2345)	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No.  PCT/GB00/00063	International filing date (day/month/year)  12/01/2000	Priority date (day/month/year)  13/01/1999
International Patent Classification (IPC) or national classification and IPC  G01C11/00		
<b>Applicant</b> <b>THE SECRETARY OF STATE FOR DEFENCE et al.</b>		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I     Basis of the report
- II     Priority
- III     Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV     Lack of unity of invention
- V     Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI     Certain documents cited
- VII     Certain defects in the international application
- VIII     Certain observations on the international application

Date of submission of the demand  27/07/2000	Date of completion of this report  24.04.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Fourrichon, P Telephone No. +49 89 2399 2579



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/00063

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-38                   as originally filed

**Claims, No.:**

1-32                   as originally filed

**Drawings, sheets:**

1/22-22/22           as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description,       pages:
- the claims,           Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/00063

- the drawings,      sheets:
5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c));  
*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*
6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims 1-21,23,24,26-32; No: Claims 22,25;
Inventive step (IS)	Yes: Claims 1-21,23,24,26-32; No: Claims 22,25;
Industrial applicability (IA)	Yes: Claims 1-32 No: Claims

**2. Citations and explanations  
see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
see separate sheet

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00063

**Item V**

- 1). The following document is referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1 = Tim Bellerby et Al.: "Retrieval of land and sea brightness temperatures from mixed coastal Pixels in passive microwave data" IEEE transactions on geoscience and remote sensing, Vol. 36, no 6, November 1988, pages 1844 1851, USA, XP 002136739.

- 2). Despite the lack of clarity (cf. item VIII), as far as the application can be understood and with a view to helping the Applicants decide which course of action to adopt, the Examiner makes the following observations on the claims.
  - 2.1) The subject-matter of independent claims 22 and 25 seems to be disclosed by document D1. In fact all the features of these claims seem to be known from D1 (see page 1844, right hand column, first and third paragraph; page 1845, left hand column, third paragraph (There are a number ...); right hand column, second paragraph; page 1846, left hand column, fourth paragraph (Typical values...) and fifth paragraph (in order to obtain...), therefore claims 22 and 25 do not appear to be novel, (Article 33 (2) PCT).
  - 2.2) Having regard to document D1, independent claims 1 and 17 as well as dependent claims 2-16, 18-21, 23 ,24, 28-32 and claim 27 are not delimited, but they seem to involve an inventive step.
- 1). **A single main claim to the apparatus and to the method as part of the**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00063

**invention, should be presented with appendant claims as appropriate to cover the Applicants' preferred embodiments.**

- 2). In each claim category, the new main claim should be presented, divided in the correct two-part form (Rule 6.3 b) PCT), i.e. into a first portion indicating the designation of the subject-matter and all the essential features which are necessary for the definition of the subject-matter and which are part of the prior art according to D1, and a second portion which is preceded by the expression "characterised in that" or "characterised by" and defining only the new technical features.
- 3). Moreover,
  - a) the independent apparatus and independent method claim should be coherently linked;
  - b) the independent claims should be linked by a common inventive concept to avoid the risk of lack of unity.
- 4). Claim 27 should be an apparatus dependent claim.
- 5) Claims 16 and 26, referring to software are not allowable and should be deleted.
- 6). Reference signs should be introduced throughout the claims (Rule 6.2 b) PCT).
- 6) The opening part of the description should be amended so that it is in agreement with the claims (as amended).
- 7) In order to set out more fully the background art useful for understanding the invention, reference should be made in the description to document D1.

**Item VIII**

The presentation of three independent claims in the same category (drafted at present in the form of US-type claims) namely claims 1, 17 and 22 give rise to two objections under article 6 PCT, i. e. lack of conciseness and lack of clarity.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00063

As to conciseness, reference is made to the established practice that the requirement of conciseness applies not only to individual claims but to the claims as a whole.

The lack of clarity derives from the consideration that the prime function of the claims is to make clear what are the essential technical features of the matter for which protection is sought. Present claims 1, 17 and 22 appear in fact to provide three somewhat differently expressed versions of essentially the same broad features. These three alternative definitions leave the reader in doubt as to what are in fact the essential features and hence the purpose of Article 6 is not satisfied.

It thus appears necessary for the Applicants to present a single independent claim in each category, with appendant claims as appropriate to cover the Applicants' preferred embodiments.